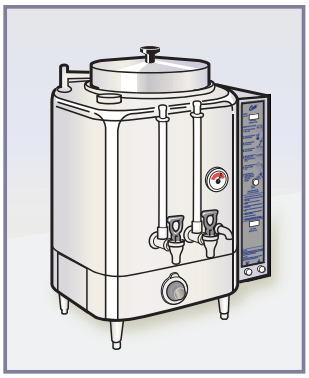
WILBUR CURTIS COMPANY, INC.

Service Manual – RU Series Automatic Urns



MODELS INCLUDED

- RU-150
- RU-225
- RU-300
- RU-600
- RU-1000

Important Safeguards/Symbols

This appliance is designed for commercial use. Any servicing other than cleaning and maintenance should be performed by an authorized Wilbur Curtis service center.

- To reduce the risk of fire or electric shock, do not open side or bottom panel. No user serviceable parts inside.
- Repair should be performed only by authorized service personnel.
- Keep hands and other items away from hot parts of unit during operation.
- Never clean with scouring powders, bleach or harsh chemicals.

Symbols

WARNINGS – To help avoid personal injury

Important Notes/Cautions – from the factory

Sanitation Requirements

The RU Automatic Urn is Factory Pre-Set and Ready to Go… Right from the Carton.

Factory Settings:

- Brew Temperature = 200°F
- Brew Volume = Set to requirements of coffee liner

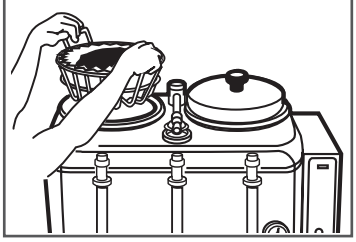
System Requirements

- Water Source: 20 – 100 psi (Min Flow Rate of 1 gpm)
- Electrical: See attached schematic for standard model or visit www.wilburcurtis.com for your model.

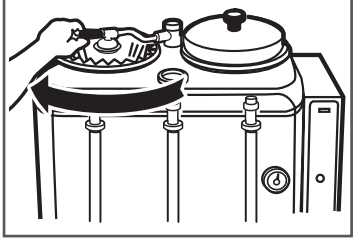
CAUTION: Please use the setup procedures in this manual before attempting to use brewer. Failure to follow the instructions can result in injury or the voiding of the warranty.
See setup procedures on page 2.

Brewing Instructions

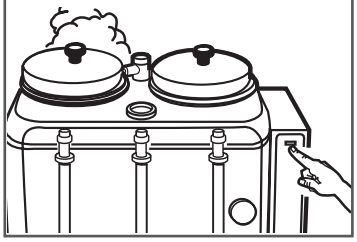
1. Place filter in basket. Pour coffee into filter. Place basket into liner.



2. Rotate spray head over bed of coffee inside filter.



3. Press the BREW button on control panel to begin brewing.



WARNING HOT LIQUID, Scalding may occur. Avoid splashing.

ISO 9001:2008 REGISTERED

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INSTALLATION AND OPERATING INSTRUCTIONS

UNPACKING THE URN

All urns are carefully packed in cartons with laminated cardboard inserts. The packaging is specifically to fitted to your urn. The packaging exceeds the requirements of the I. C. C. regulations. Inspect all containers at the time of delivery for visual or concealed damage. In case of punctured or damaged cartons the carrier must be notified immediately.

PACKING LIST

ITEM	QTY SINGLE	QTY TWIN
WIRE BASKET	1	2
LID WITH KNOB	1	2
FAUCET, HOT WATER	1	1
FAUCET, COFFEE	1	2
LEGS, ADJUSTABLE	4	4
FILTERS, PAPER	25	40
SERVICE MANUAL	1	1

WARNING: DO NOT place this urn closer than six [6] inches from wall. Urn must have adequate cross-ventilation.

NOTE: A water filtration system must be used to help maintain trouble-free operation. **Air must be purged from the cartridge prior to connection to equipment.** In areas with extremely hard water, we recommend the use of a Curtis approved water filter. For our full line of filters, please log on to www.wilburcurtis.com.

SETUP STEPS

1. Attach adjustable legs, threading them into the holes beneath the four corners of the urn.
2. Place unit at counter height, on a firm, level base, near water and power supply connections.
3. Install the water and coffee faucets.
4. Connect water line to inlet fitting on valve. All Curtis Automatic Urns are equipped with a ¼" male flare fitting which must be connected to the water supply with a ¼" copper tubing and a ¼" flare nut. Water pressure entering brewer is required to be stable and must provide minimum of 1 gallon per minute. Use water regulator for constant pressure. Required water pressures, 20 to 100 psi.

CAUTION: DO NOT connect this urn to hot water. The inlet valve is not rated for hot water.

5. Turn on water valve.
6. Hook-up electrical power to the unit (refer to schematic for power requirements). If gas or steam, 120V circuit is required.
7. When power is turned on, water will start flowing into the water jacket. To expedite the filling of the urn, you may use the emergency refill valve located behind the machine.

CAUTION Don't forget to close the valve once the water jacket has filled.

8. When the water jacket has filled, turn on the thermostat by turning the dial clockwise to the desired setting. It will take 50 to 60 minutes for the heating tank to reach operating temperature. On electric urns, the thermostat indicator will light at this time.

WARNING When you hookup an electric urn, use the proper wire gauge, plus 25% (see table on page 12). Never use fuses or breakers larger than needed.

The body of the urn must be securely grounded with a separate grounding conductor and never with the neutral conductor of a single phase, 3 wire system. Refer to the wiring diagram included with each urn for wire gauge.

CARE AND MAINTENANCE OF URN

PREVENTIVE MAINTENANCE

I. Remove the spray head from the urn and clean it once a week. More often in heavy lime areas.

WARNING Switch off the power to the unit at the circuit breaker. Turn off the water line running to the urn.

2. Clean the faucet seat cups twice a week and replace when cracked or leaking.

3. Periodic temperature checks and thermostat adjustments should be made by authorized personnel.

CLEANING

To ensure the highest quality coffee, the urn must be cleaned daily after the last batch of coffee is used.

Regular cleaning and preventive maintenance is essential in keeping your coffee urn looking and working like new.

CAUTION Do not use cleaning products containing chemicals that will damage stainless steel, ammonia and bleaches containing chlorine. Never use abrasives that will scratch the outside surface of the urn.

DAILY CLEANING INSTRUCTIONS

WARNING These steps involve working with very hot water.

I. After all the brewed coffee has been drawn from the urn, run a brew cycle of fresh water. Spray the hot water into the liner, then thoroughly brush it out with a long handled brush.

2. Drain the water off then repeat step one. Run another brew cycle. Brush out the liner and drain. Wipe down the liner with a clean towel.

3. If urn is not going to be used immediately, pour a gallon or two of fresh water into the liner. Remember to drain off this water before making another brew.

4. Wash the wire brew baskets with urn cleaner and rinse thoroughly.

TWICE A WEEK

Coffee urns must have a special coffee liner scouring twice a week.

1. Be sure water jacket is full of water and temperature is at brewing temperature.

2. Fill the liner with several gallons of water and add at least 1½ ounces of coffee urn cleaning compound. Allow this solution to remain in the liner approximately 30 minutes. During this time, the thermostat should be set to BOIL.

WARNING Very hot water.

3. Scrub the inside of the liner and cover with a long handled brush.

4. Drain the all the urn cleaning solution and rinse by running several brew cycles with the spray head centered over the liner, draining the rinse water between sprays.

5. Thoroughly clean the faucets.

WARNING Never remove the faucet when the liner has water or coffee in it.

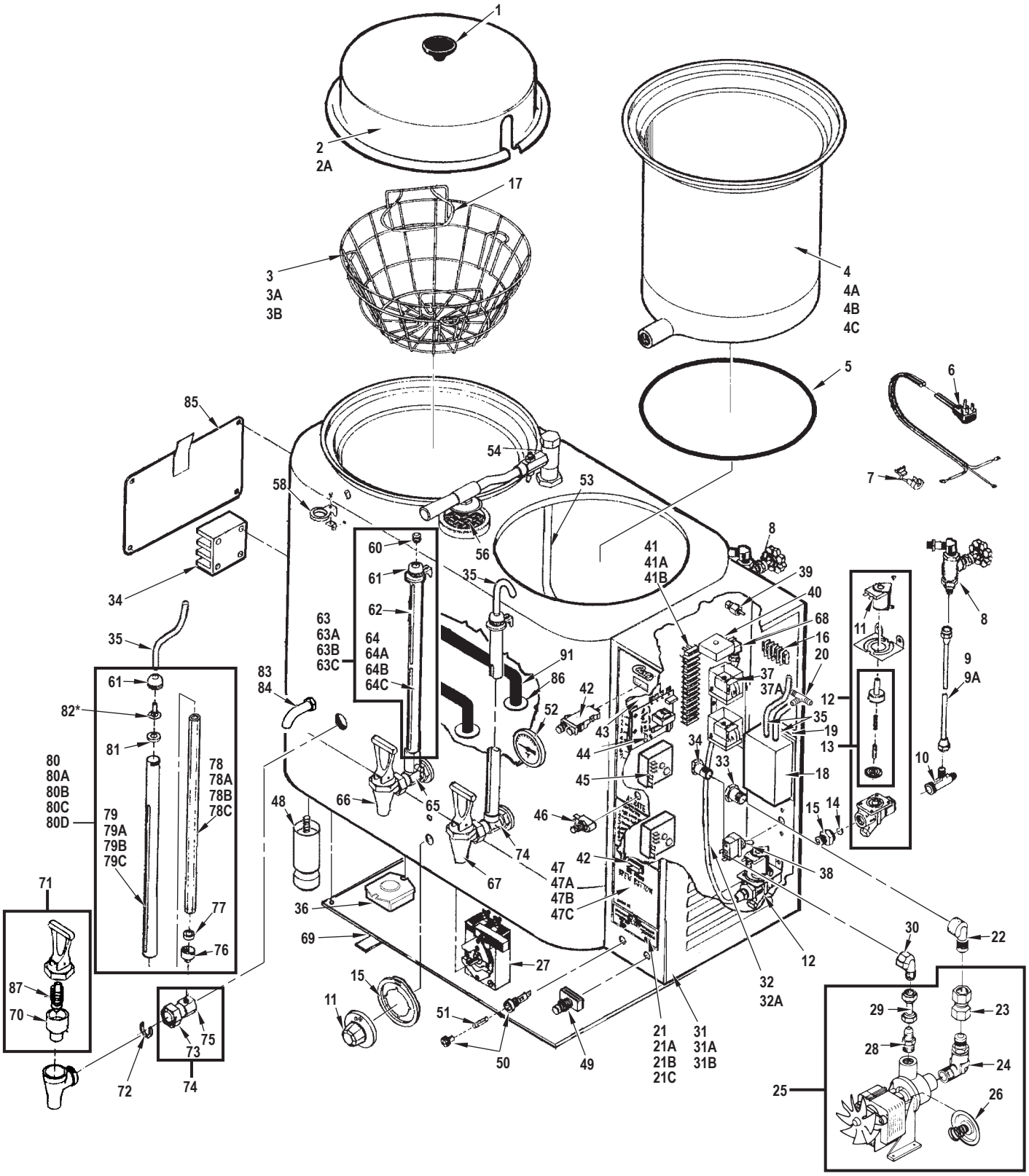
Switch off the power to the unit at the circuit breaker. Turn off the water line running to the urn.

Use a long thin gauge glass brush to clean the coffee gauge glass. Use the same brush to clean the fitting at the bottom of the liner and the pipe connecting to the coffee faucet.

6. Leave a gallon or two of fresh water in the liner. Drain just before brewing coffee.

7. After the unit is clean, return the water and power to the unit.

ILLUSTRATED PARTS LIST AUTOMATIC URNS, RU-150, RU-225, RU-300, RU-600, RU-1000 ELECTRIC



*82 NOT INCLUDED WITH GAUGE GLASS ASSEMBLY.

INDEX №	PART №	DESCRIPTION	EQUIPMENT USED ON
1	WC-3205	KNOB URN LID 1/4-20 FEMALE THREAD	ALL RU URNS
2	WC-5601	LID, LINER ASSEMBLY	RU-150, RU-300
2A	WC-5603	LID, LINER ASSEMBLY	RU-225, RU-600, RU-1000
3	WC-3302	BREW BASKET WIRE W/FLAPS	RU-150, RU-300
3A	WC-3303	BREW BASKET WIRE W/FLAPS	RU-225, RU-600
3B	WC-3304	BREW BASKET WIRE W/FLAPS	RU-1000
4	WC-5700	LINER, 3 GAL	RU-150
4A	WC-5706	LINER, 6 GAL	RU-225, RU-600
4B	WC-5704	LINER, 3 GAL	RU-300
4C	WC-5708	LINER, 10 GAL	RU-1000
5	WC-4303	O' RING, LINER	RU-150, RU-300
5A	WC-43076	O' RING, LINER	RU-225, RU-600, RU-1000
6	WC-1200	CORD, 14/3 SJTO 6' BLACK WITH PLUG	ALL GAS, STEAM & 3Ø RU URNS
7	WC-1408	GRIP, CORD 7/8" OD	ALL GAS, STEAM & 3Ø RU URNS
8	WC-806	VALVE, 1/4" GATE PLATED	ALL RU URNS
9	WC-53104	TUBE ASSY, 1/4x14.50 ER W/NUTS	RU-150, RU-300
9A	WC-53105	TUBE ASSY, 1/4x17.00 ER W/NUTS	RU-225, RU-600
9B	WC-53109	TUBE ASSY, 1/4" ER W/NUTS	RU-1000
10	WC-2705	TEE, 1/4 X 1/4 FLARE X 3/8 NPT PLATED	ALL RU URNS
11	WC-3217	KNOB, THERMOSTAT	ALL RU URNS
12	WC-801	VALVE, INLET BRASS .50 GPM 120V 10W	ALL RU URNS
13	WC-3700	KIT, INLET VALVE REPAIR	ALL RU URNS
14	WC-813	FLOW WASHER, .5 GPM .5" S45	ALL RU URNS
15	WC-3220	BEZEL, THERMOSTAT ELECTRIC URNS	ALL RU URNS
16	WC-301	TERMINAL STRIP, 4-S	ALL RU URNS (BEFORE 1/29/13)
17	WC-3305	FLAPS WIRE BASKET (2 REQUIRED)	RU-150 & RU-300
18	WC-37166	KIT, AIR PUMP RU'S	ALL RU URNS
19	WC-5843	BRACKET, AERATOR PUMP	ALL RU URNS
20	WC-3600	T-CONNECTOR 3/16 POLYPROPYLENE	RU-150 & RU-225
21	WC-39570	LABEL, INSTRUCTION PANEL	RU-150 & RU-300 (AFTER 1/29/13)
21A	WC-39571	LABEL, INSTRUCTION PANEL	RU-225 & RU-600 (AFTER 1/29/13)
21B	WC-39574	LABEL, INSTRUCTION PANEL	RU-1000 (AFTER 1/29/13)
22	WC-2405	ELBOW, 1/2 FLARE x 1/2 NPT	ALL RU URNS
23	WC-2609	SWIVEL, 1/2" TUBE X 1/2 NPT	ALL RU URNS
24	WC-2504	ELBOW, 1/2 NPT X 1/2 NPT	ALL RU URNS
25	WC-1037	PUMP, WATER W/FITTINGS 120VAC	ALL RU URNS
26	WC-3702	KIT, WATER PUMP SEAL RU'S	ALL RU URNS
27	WC-37165	KIT, THERMOSTAT WC-500A/501A	ALL RU URNS
28	WC-2605	CONNECTOR, 3/8" FLARE x 3/8"	ALL RU URNS
29	WC-2608	SWIVEL, 3/8 TUBE x 3/8 NPT	ALL RU URNS
30	WC-2403	ELBOW, 3/8 FLARE x 3/8 NPT PLATED GEN USE	ALL RU URNS
31	WC-5808	DOOR, CONTROL BOX LOUVER	RU-225, RU-600
31A	WC-5807	DOOR, CONTROL BOX LOUVER ACB	RU-150, RU-300
31B	WC-5809	DOOR, CONTROL BOX LOUVER	RU-1000
32	WC-5322	TUBE ASSY, 1/4 X 20.00 W/NUTS	RU-225, RU-600
32A	WC-5321	TUBE ASSY, 1/4x17.00 WI W/NUTS	RU-150, RU-300
33	WC-2929	FITTING, 1/2 NIPPLE/NUT BRASS	ALL RU URNS
34	WC-300	POWER BLOCK 3-STA 175A 600V	ALL RU URNS
35	WC-5307	TUBE, 3/16 ID x 3/32W SILICONE	ALL RU URNS
36	WC-522	THERMOSTAT, HIGH LIMIT HEATER	ALL RU URNS
37	WC-402*	RELAY HOLDING 120V COIL 20A	ALL RU URNS (BEFORE 1/29/13)
37A	WC-403*	RELAY HOLDING 120V 3 POLE	RU-1000 (BEFORE 1/29/13)

* ITEMS 37 AND 37A, AFTER 1/29/13 SEE ITEMS 45, 45A, 45B

INDEX №	PART №	DESCRIPTION	EQUIPMENT USED ON
38	WC-102	SWITCH, TOGGLE NON-LIT SPST	ALL RU URNS
39	WC-5502-01	KIT, PROBE, WTR LVL W/FTNG, O'RING, NUT	ALL RU URNS
40	WC-405R-101	TIMER, AGITATION 90-260 VAC 30 SEC	ALL RU URNS
40A	WC-405R	TIMER, AGITATION 120V 50/60Hz WIR/BRKT	ALL RU URNS
41	WC-304	TERMINAL STRIP 14-S	RU-225, RU-600, RU-1000
41A	WC-303	TERMINAL STRIP 12-S	RU-150, RU-300
41B	WC-302	TERMINAL STRIP 6-S	RU-1000
42	WC-3737	KIT, BREW SWITCH 120V RU'S	ALL RU URNS
43	WC-5802	BRACKET, WATER LEVEL CONTROL	ALL RU URNS
44	WC-608-101K	KIT,LIQUID LEVEL CONTROL BOARD	ALL RU URNS
45	WC-603-101K-RU	KIT, RETROFIT TIMER,120V RU-300 W/½BB	ALL RU URNS
45A	WC-622-101K-RU	KIT, BREW TIMER, 220V RU-300 NO ½BB	RU-300 220V
45B	WC-603-102K-RU	KIT, BREW TIMER, 220V RU-1000 ⅓ BB	RU-1000 220V
46	WC-101	SWITCH, ON/OFF NON-LIT MOMENT SPST	ALL RU URNS
47	WC-3903	LABEL, INSTRUCTION PANEL	RU-600 (BEFORE 1/29/13)
47A	WC-3900	LABEL, INSTRUCTION PANEL	RU-150 (BEFORE 1/29/13)
47B	WC-3901	LABEL, INSTRUCTION PANEL	RU-225 (BEFORE 1/29/13)
47C	WC-3902	LABEL, INSTRUCTION PANEL	RU-300 (BEFORE 1/29/13)
47D	WC-3904	LABEL, INSTRUCTION PANEL	RU-1000 (BEFORE 1/29/13)
48	WC-3528	LEG, 4" ADJUSTABLE 3/8-16 THREAD	ALL RU URNS
49	WC-100	SWITCH, RESET-STOP NC NL MOMENTARY	ALL RU URNS
50	WC-1501	FUSE HOLDER W/5A FUSE	ALL RU URNS
51	WC-1500	FUSE, 5 AMP	ALL RU URNS
52	WC-511	THERMOMETER, DIAL	ALL RU URNS
53	WC-5313	TUBE ASSY, 1/2" SPRAY ARM W/NUTS	RU-300, RU-150
53A	WC-5314	TUBING 1/2" SPRAY ARM W/NUTS	RU-225, RU-600
53B	WC-5315	TUBING 1/2" SPRAY ARM W/NUTS	RU-1000
54	REFER TO VALVE CORE & SPRAY ARM ON PAGE 8		
56	WC-5800	RING, STEAM	ALL RU URNS
58	WC-2007	BRACKET, GAUGE GLASS	ALL RU URNS
60	WC-2003	CAP, PLUG VENTED 44	ALL RU URNS
61	WC-2002	CAP, SHIELD W/CLEAN OUT HOLE	ALL RU URNS
62	WC-2030	GLASS, GAUGE 13"	
63	WC-2108	GAUGE GLASS ASSEMBLY 13"	RU-225, RU-600
63A	WC-2104	GAUGE GLASS ASSEMBLY 10"	RU-150
63B	WC-2105	GAUGE GLASS ASSEMBLY 11"	RU-300
63C	WC-2113	GAUGE GLASS ASSEMBLY 19"	RU-1000
64	WC-2017	SHIELD, GAUGE GLASS 13"	RU-225, RU-600
64A	WC-2104	SHIELD, GAUGE GLASS 10"	RU-150
64B	WC-2014	SHIELD, GAUGE GLASS 11"	RU-300
64C	WC-2022	SHIELD, GAUGE GLASS 19"	RU-1000
65	WC-1900	VALVE, GAUGE SHIELD SHUT OFF	ALL RU URNS
66	WC-1800L	FAUCET, "S" SERIES LOCKING	ALL RU URNS
70	WC-1805	SEAT CUP, S' FAUCET SILICONE	ALL RU URNS
71	WC-3705	KIT, S' FAUCET REPAIR	ALL RU URNS
72	WC-1906	C' RING .917 X .760 X .090	ALL RU URNS
73	WC-1903	NUT, UNION SHANK	ALL RU URNS
76	WC-2004	SHIELD BASE, GAUGE GLASS	ALL RU URNS
77	WC-2006	WASHER, .188 ID X .188 THICK BOTTOM	ALL RU URNS
78	WC-2031	GLASS, GAUGE ⅝" x 14"	RU-225, RU-600
78A	WC-2028	GLASS, GAUGE ⅝" X 11"	RU-150
78B	WC-2029	GLASS, GAUGE ⅝" X 12"	RU-300
78C	WC-2037	GLASS, GAUGE ⅝" X 20"	RU-1000

INDEX №	PART №	DESCRIPTION	EQUIPMENT USED ON
79	WC-2019	SHIELD, GAUGE GLASS 14”	RU-225, RU-600
79A	WC-2014	SHIELD, GAUGE GLASS 11”	RU-150
79B	WC-2016	SHIELD, GAUGE GLASS 12”	RU-300
79C	WC-2023	SHIELD, GAUGE GLASS 20”	RU-1000
80	WC-2109	GAUGE GLASS ASSEMBLY 14”	RU-600, RU-225
80A	WC-2105	GAUGE GLASS ASSEMBLY 11”	RU-150
80B	WC-2107	GAUGE GLASS ASSEMBLY 12” SHORT WIN	RU-300
80C	WC-2114	GAUGE GLASS ASSEMBLY 20”	RU-1000
81	WC-2005	SHIELD CAP, WASHER, 1/8”	ALL RU URNS
82	WC-2000	FITTING, AGITATION PLATED	ALL RU URNS
83	WC-4205	NUT, 1/4 LOCK NPS BRASS	ALL RU URNS
84	WC-2913	SPOUT OVERFLOW	ALL RU URNS
85	WC-5810	COVER, ELECTRIC BOX	RU-600, RU-1000
86	WC-4305	WASHER 5/8” TEFLON	ALL RU URNS
87	WC-3402	SPRING, RETURN S SERIES FAUCET	ALL RU URNS
88	—	REFER TO HEATING ELEMENT CHART ON PAGE 9	

PARTS LIST DOUBLE SERVICE URNS

1	WC-5701	LINER, 3 GAL	RU-150DS
2	WC-5703	LINER, 6 GAL	RU-225DS
3	WC-5705	LINER, 3 GAL	RU-300DS
4	WC-5707	LINER, 6 GAL	RU-600DS
5	WC-5709	LINER, 10 GAL	RU-1000DS
6	WC-5458	STEAM RING PLATE	ALL DS RUs

PARTS LIST 220V, 3 PHASE URNS (3W +G or 4W +G)*

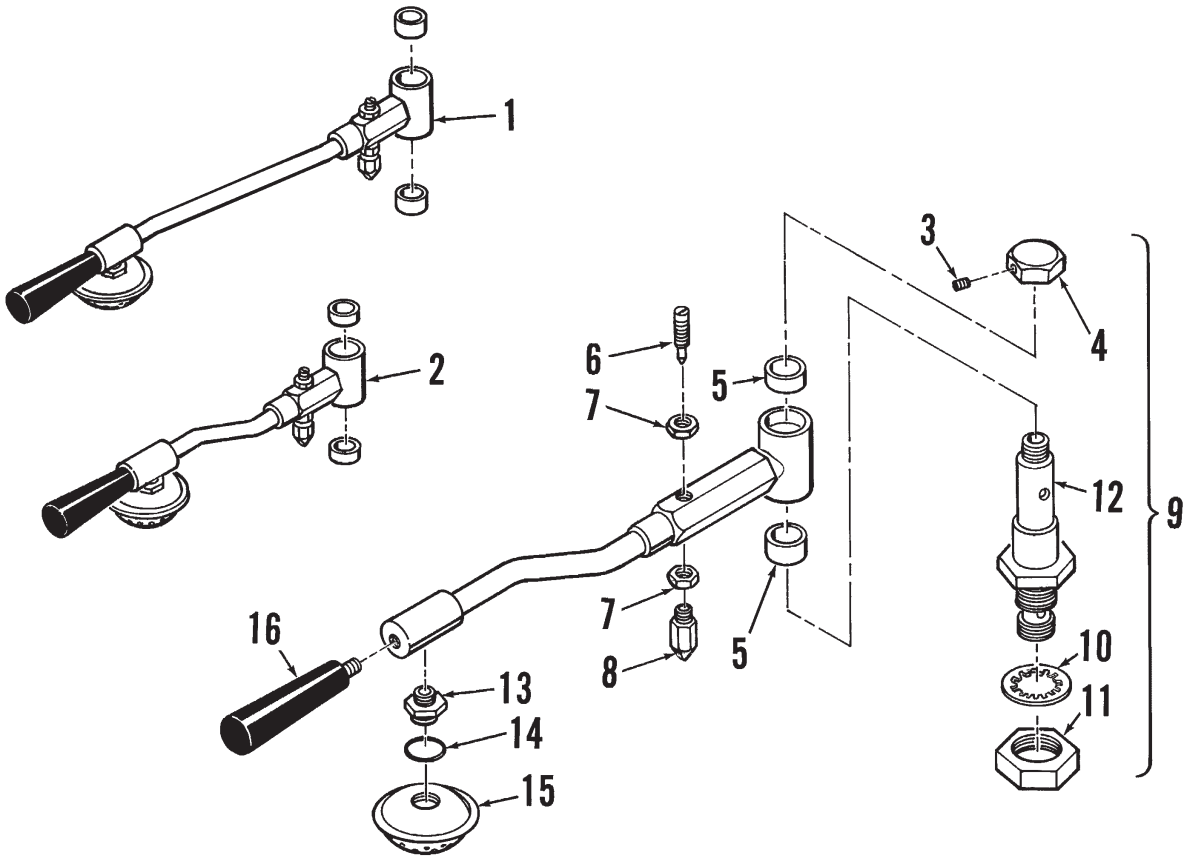
1	WC-431	CONTACTOR, 120V 60A 3P DP	ALL 220V 3-PH RU
2	WC-703	TRANSFORMER, .5KVA 240-120V	ALL 220V 3-PH RU
3	WC-710	TRANSFORMER, 240/480 120V,500VA	ALL 220V 3-PH RU
4	WC-1200	CORD, 14/3 SJTO 6’ BLK (3PH 3W+G W/120V BOX)	ALL 220V 3-PH RU
5	WC-1408	CORD GRIP	ALL 220V 3-PH RU
6	WC-37165	KIT, THERMOSTAT WC-500A/501A	ALL 220V 3-PH RU
7	WC-502	THERMOSTAT, CAPILLARY LWC OFF DPST	ALL 220V 3-PH RU

PARTS LIST EXPORT 220V CONTROLS*

1	WC-3738	KIT, BREW SWITCH 220V RU RPL	ALL 220V RU
2	WC-410	COIL FOR INLET VALVE (220V) S45	ALL 220V RU
3	WC-417	RELAY, HOLDING 220V 2P 10A RU (AFTER 1/29/13)	ALL 220V RU
4	WC-622-101K-RU	KIT, RETROFIT TIMER, BREW SELECTOR 220V	RU-300 NO ½BB
5	WC-633	TIMER, CUBE W/BRACKET 240V 25 SEC	ALL 220V RU
6	WC-858	VALVE, INLET BRASS .50 GPM 220V 10W	ALL 220V RU
7	WC-1009	PUMP, AGITATION (220V)	ALL 220V RU

*REFERENCE THE ELECTRICAL DIAGRAM FOR YOUR SPECIFIC UNIT.

SPRAY ARM ASSEMBLY

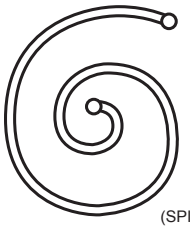


INDEX №	PART №	DESCRIPTION
1	WC-2909	SPRAY ARM ASSEMBLY, RU-225/600/1000
2	WC-2908	SPRAY ARM ASSEMBLY, RU-300, RU-150
3	WC-4800	SCREW, 8-32 x 1/8” SET S.S.
4	WC-3103	CAP, CLEAN OUT VALVE CORE PLATED
5	WC-4307	RING, PACKING TEFLON 2-REQUIRED
6	WC-2916	NEEDLE, BY-PASS PLATED (SPRAY ARM)
7	WC-4202	NUT, 3/8” - 24 JAM, PLATED
8	WC-2914	SPOUT, BY PASS PLATED (SPRAY ARM)
9	WC-3753	KIT, VALVE CORE REPLACEMENT
10	WC-4310	WASHER, 7/8” INTERNAL TOOTH LOCK 410 STAINLESS STEEL
11	WC-4215P	NUT, 7/8” JAM BRASS
12	WC-3109	VALVE CORE, PLATED
13	WC-2904	SPRAY HEAD HOLDER PLATED
14	WC-4320	“O” RING, ½”ID BUNA #.016
15	WC-2907	SPRAY HEAD, ASSY (SC)RU-150/225/300/600/1000
16*	WC-3200	HANDLE, SPRAY ARM BLACK PLASTIC

* Use only with valve cores that do not have Teflon restrictors.

HEATING ELEMENTS, LOCATION & CONFIGURATION

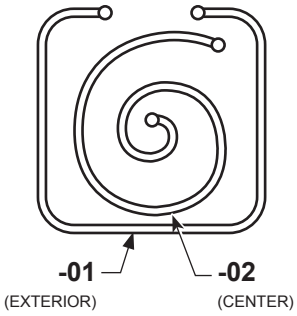
RU-150 & WB-14 1 PHASE



WC-913-01
220V, 5 KW

RU-225 1Ø

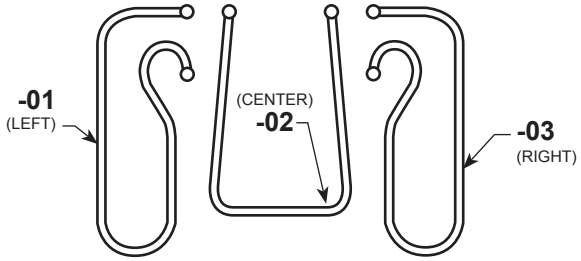
220V, 1PH, 3 WIRE + GND



WC-911 -01
220V, 3.5KW

WC-911-02
220V, 3.5 KW

RU-150 & 225 3 PHASE



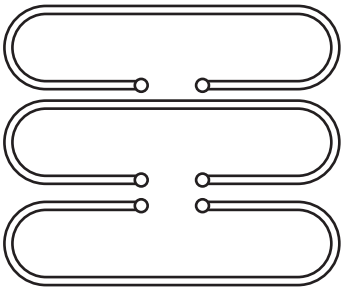
RU-150-20 5.25 KW, 208/220V, 3PH, 3 OR 4 WIRE + GND.

WC-907-01	220V @ 1.75 KW
WC-907-02	220V @ 1.75 KW
WC-907 -03	220V @ 1.75 KW

RU-225-20 7.5 KW, 208/220V, 3PH, 3 OR 4 WIRE + GND.

WC-908-01	220V @ 2.5 KW
WC-908-02	220V @ 2.5 KW
WC-908-03	220V @ 2.5 KW

RU-300, 600 & 1000 3 PHASE



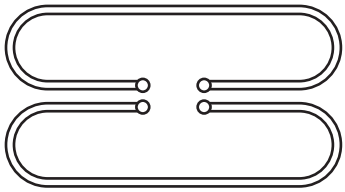
THESE ELEMENTS ARE INTERCHANGE-ABLE

RU-300 7.5 KW, 208/220V, 3PH, 3 OR 4 WIRE + GND.
3 - WC-908 220V @ 2.5 KW EA.

RU-600 10.5 KW, 208/220V, 3PH, 3 OR 4 WIRE + GND.
3 - WC-911 220V @ 3.5 KW EA.

RU-1000 10.5 KW, 208/220V, 3PH, 3 OR 4 WIRE + GND.
3 - WC-911 220V @ 3.5 KW EA.

RU-300, 600 & 1000 1 PHASE



THESE ELEMENTS ARE INTERCHANGE-ABLE

RU-300 6 KW, 208/220V, 1PH, 3 WIRE + GND
2 - WC-910 220V @ 3 KW EACH

RU-300 8 KW, 208/220V, 1PH, 3 WIRE + GND
2 - WC-912 220V @ 4 KW EA.

RU-600 10 KW, 220V, 1PH, 3 WIRE + GND
2 - WC-913 220V @ 5 KW EACH

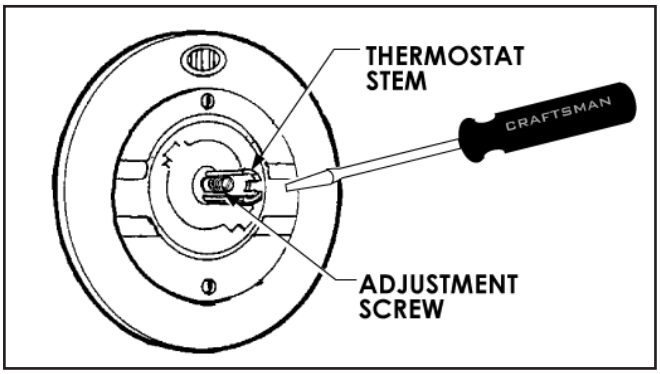
RU-600 8 KW, 220V, 1PH, 3 WIRE + GND
2 - WC-912 220V @ 4 KW EACH

RU-1000 10 KW, 220V, 1PH, 3 WIRE + GND
2 - WC-913 220V @ 5 KW EACH

ELECTRIC THERMOSTAT ADJUST

On electric urns, thermostats are set at the factory to cut off at 200ºF. We do not recommend changing this. If necessary, adjustment is as follows:

1. Rotate the thermostat knob to the right to the BOIL position. Pull off the knob.
2. In the thermostat stem, locate the tiny adjustment screw (see illustration). Using a small screwdriver, adjust the temperature up or down:
   a. Turning the screw ¼ turn to the left will increase the temperature about 20°F.
   b. Turning the screw ¼ turn to the right will decrease the temperature by 20°F.
   c. To set the thermostat precisely at 200°F, insert a thermometer probe into the water jacket through the steam hole (just under the spray head). Turn the screw ½ turn to the left. When the thermometer reaches 200°F, slowly turn the adjustment screw to the right until the pilot light turns off.



GAS URN INSTALLATION

The urn must be away from wall no less than 6" and must have plenty of cross ventilation.

The water supply connection is the same in all RU models. All that is needed is 1/4" copper tubing with a 1/4" flare nut and some sort of water filter in the line before water enters the unit. Once the water connection is complete, open the water line, then plug in the power cord into an 115V outlet. To facilitate the filling of the water jacket, you can open the emergency refill faucet (red knob) behind the unit, to increase the speed of filling the urn. Water must be above the base of the center gauge glass before turning on the heat.

IMPORTANT Be sure to shut off the emergency refill valve after filling to prevent overflow!

GAS CONNECTION

All RU automatic urns are supplied with a 3/8" pressure connector at the end of the gas valve. This valve is connected to the thermostat. Use 3/8" O.D. stainless steel flex tubing to make the connection from the urn to the gas valve in your facility. When the connections are complete, turn the gas on. Check the line for leaks.

MAIN BURNER ADJUSTMENT

To adjust the main burner flame, turn the thermostat dial to **6½** for 195ºF or **7** for 200ºF. For older units (made before serial number 12327781), turn the screw under the gas cock handle in either direction to regulate the flow of gas to the main burner.

PROCEDURE FOR LIGHTING OR RELIGHTING

1. Turn GAS COCK handle to "off" position, and thermostat dial to lowest temperature position.
2. Wait sufficient length of time to allow gas which may have accumulated in burner compartment to escape.
3. Turn pilot dial to "Pilot" position.
4. Push in the pilot dial (the dial has a slight inward travel) and rotate it to the PILOT position. On older units, there is a separate red SET button that must be pushed in to allow the dial to turn.
5. Continue pressing in the dial while lighting the pilot burner. The pilot is located inside the burner compartment, between the main burners.
5. Once lit, continue pressing in the dial for 30 seconds. If the pilot flame does not remain lit, repeat operation allowing longer period before releasing pilot dial.
6. Turn the pilot dial to the ON position. Turn the thermostat dial to the desired position. The main burner will then ignite.

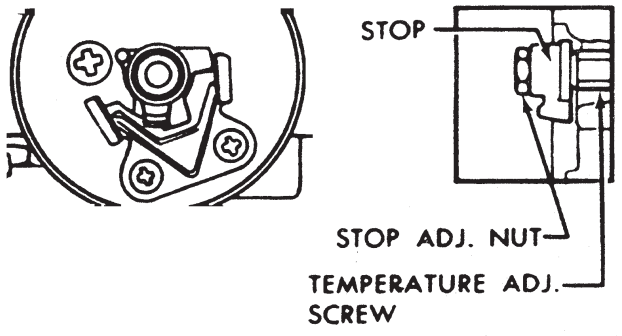
PROCEDURE FOR ADJUSTING PILOT

1. Remove pilot adjustment cap. Adjust pilot key, allowing flame to completely envelop the end ⅜" of the Thermocouple.
2. Adjust pilot burner air shutter (if provided) to obtain a soft blue flame.

TO RE-CALIBRATE THE THERMOSTAT

The Unitrol thermostat is built to the most exacting standards and is a precision instrument which should never need re-calibration. However through tampering, misuse or other reasons, if the thermostat is found to be more than 10º from normal, a re-calibration may be performed by a qualified service technician. The following are the steps for this procedure:

1. Turn the thermostat to OFF to allow the unit to cool down.
2. When the water temperature is room temperature, turn the thermostat dial until the main burner ignites.
3. Slowly, turn the thermostat dial counterclockwise until the flame on the burner goes out.
4. Place a thermometer into the water jacket to determine the temperature of the water.
5. Pull off the thermostat dial and lift off the outside cover.



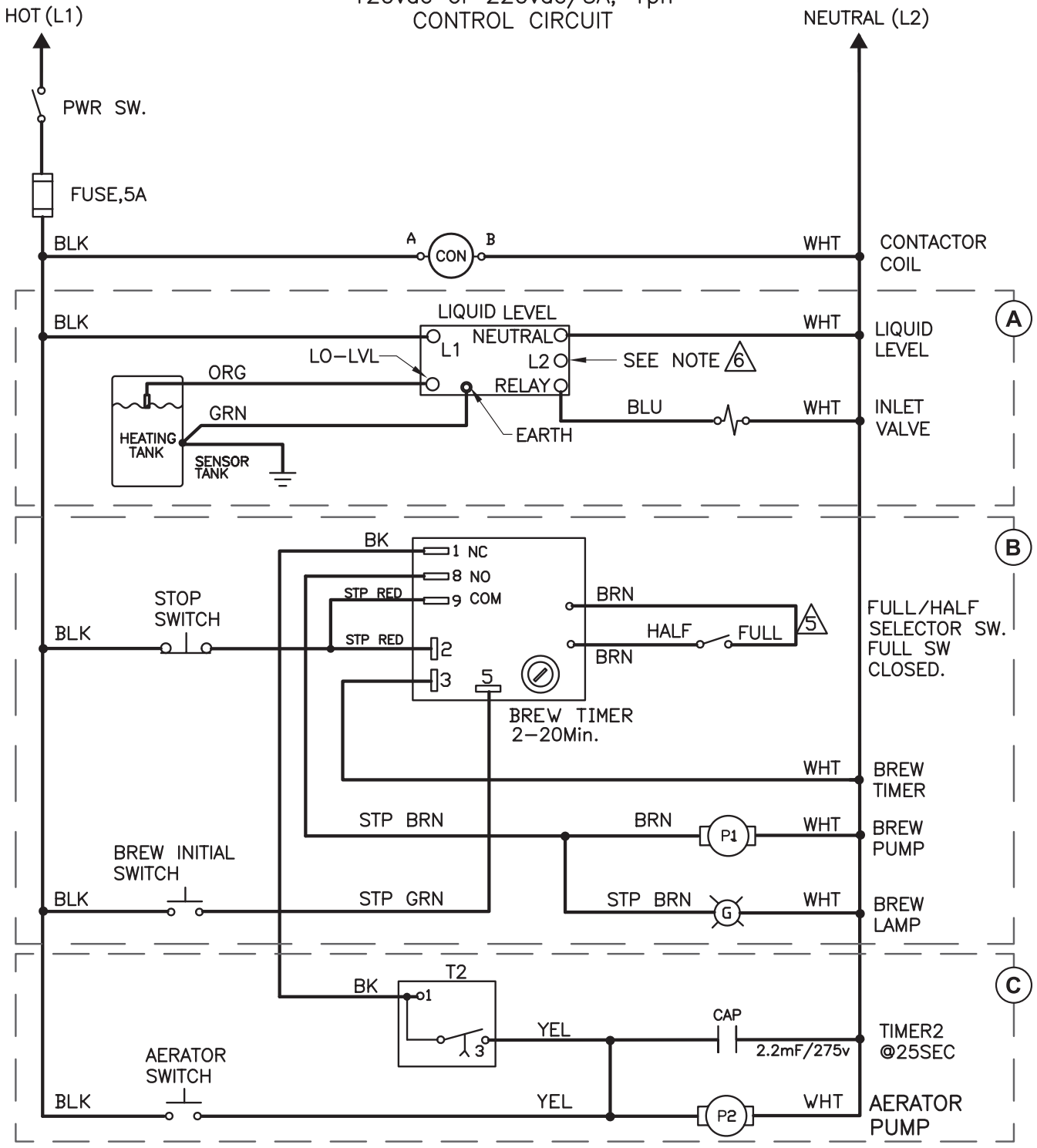
6. Turn the temperature stop to correspond to the actual water temperature. Mark the location of the stop for reference.
7. Turn the stop slowly until the control snaps off. Holding the stop to prevent rotation, carefully loosen the stop adjustment nut (see illustration above).

COPPER WIRE SIZE REQUIRED

SINGLE PHASE	THREE PHASE
6 KW . . . . . #10 WIRE	5.25 KW . . . . . #12 WIRE
8 KW . . . . . #8 WIRE	7.5 KW . . . . . #10 WIRE
10 KW . . . . . #8 WIRE	9 KW . . . . . #8 WIRE
15 KW . . . . . #6 WIRE	10.5 KW . . . . . #8 WIRE
	12 KW . . . . . #8 WIRE
	15 KW . . . . . #6 WIRE

ELECTRICAL DATA

MODEL	VOLTS	PHASE	WIRES	WATTS	AMPS	ELEMENTS
RU-150 -12	220	1	3W + GND	5 KW	23	1 - WC-913 -01 220V, 5 KW
RU-150 -20	208/220	3	3W OR 4W + GND	5.25 KW	15	1 - WC-907 -01 220V, 1.75 KW LEFT
						1 - WC-907 -02 220V, 1.75 KW CENTER
						1 - WC-907 -03 220V, 1.75 KW RIGHT
RU-225 -12	220	1	3W + GND	7 KW	32	1 - WC-911 -01 220V, 3.5 KW
						1 - WC-911 -02 220V, 3.5 KW
RU-225 -20	208/220	3	3W OR 4W + GND	7.5 KW	21	1 - WC-908 -01 220V, 2.5 KW LEFT
						1 - WC-908 -02 220V, 2.5 KW CENTER
						1 - WC-908 -03 220V, 2.5 KW RIGHT
RU-300 -12	220	1	3W + GND	6 KW	27	2 - WC-910 220V, 3 KW
RU-300 -28	220	1	3W + GND	8 KW	36	2 - WC-912 220V, 4 KW EA.
RU-300 -20	208/220	3	3W OR 4W + GND	7.5 KW	21	3 - WC-908 220V, 2.5 KW EA.
RU-600 -12	220	1	3W + GND	10 KW	46	2 - WC-913 220V, 5 KW EA.
RU-600 -28	208/220	1	3W + GND	8 KW	38	2 - WC-912 220V, 4 KW EA.
RU-600 -20	208/220	3	3W OR 4W + GND	10.5 KW	29	3 - WC-911 220V, 3.5 KW EA.
RU-1000 -12	220	1	3W + GND	10 KW	46	2 - WC-913 220V, 5 KW EA.
RU-1000 -20	208/220	3	3W OR 4W + GND	10.5 KW	29	3 - WC-911 220V, 3.5 KW EA.



6 WHEN USING 220VAC CONFIGURATION CONNECT WHITE WIRE FROM NEUTRAL TO L2.

5 FULL & 1/3 BATCH FOR RU1000. FULL AND HALF BATCH FOR RU150/225/300/600.

4 ALL COMPONENTS IN CONTROL CIRCUIT WILL BE 120VAC OR 220VAC DEPEND ON POWER SUPPLY AND CIRCUIT CONFIGURATION.

3 USE THIS DIAGRAM FOR OTHER MODELS WITH ADDED PREFIX AND/OR WITH SECOND DASH NUMBER ON THEIR PART NUMBERS PROVIDED THEY HAVE THE SAME ELECTRICAL SPECS AND/OR RATINGS.

2 DO NOT CHANGE NOR SUBSTITUTE WIRE COLORS. ALL WIRES SHALL BE 18AWG.

1 ALL WIRES SHALL BE UL APPROVED APPLIANCE

NOTES: UNLESS OTHERWISE SPECIFIED

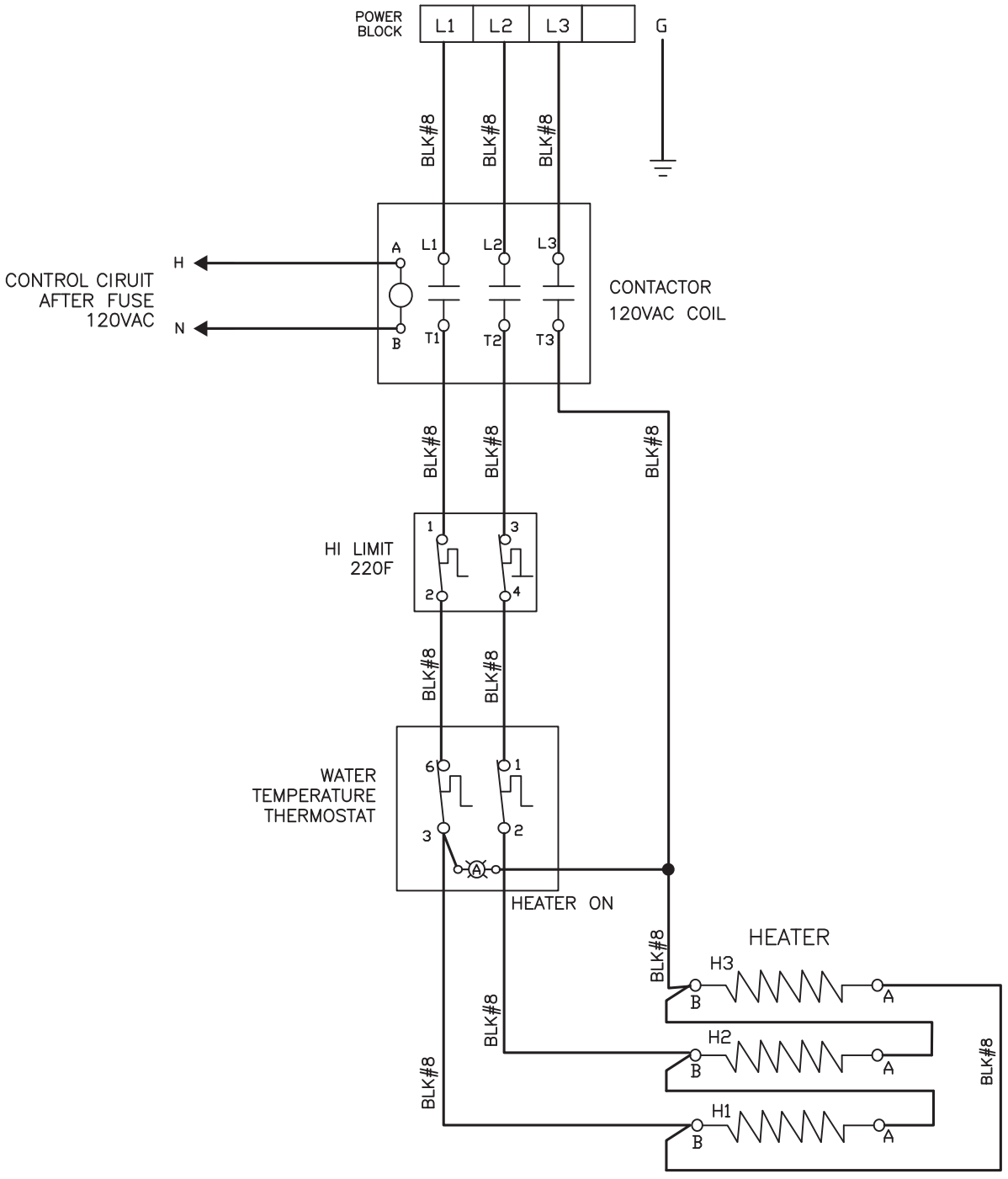
VOLTAGE:	120/240
WATTAGE:	600
AMPERAGE:	5A
HERTZ:	50/60
WIRES:	2W + G
PHASE:	1 PH

TITLE: LADDER DIAGRAM CONTROL CIRCUIT,STD.

PART NUMBER: LD-RUCNTRL-100

REVISION: B

Configuration #12
Heater Circuit
3PHASE 3W+G
With 120VAC POWER CORD CNTRL CIRCUIT



NOTES:

1. CONTACTOR COIL CONNECT TO CONTROL CIRCUIT AFTER FUSE
2. 120VAC POWER CORD CONNECT TO CONTROL CIRCUIT (LD–RUCNTRL–100 AT H & N)

VOLTAGE:	SEE BOM
WATTAGE:	SEE BOM
AMPERAGE:	SEE BOM
HERTZ:	50/60
WIRES:	3W + G
PHASE:	3 PH

TITLE: LADDER DIAGRAM HEATER CIRCUIT

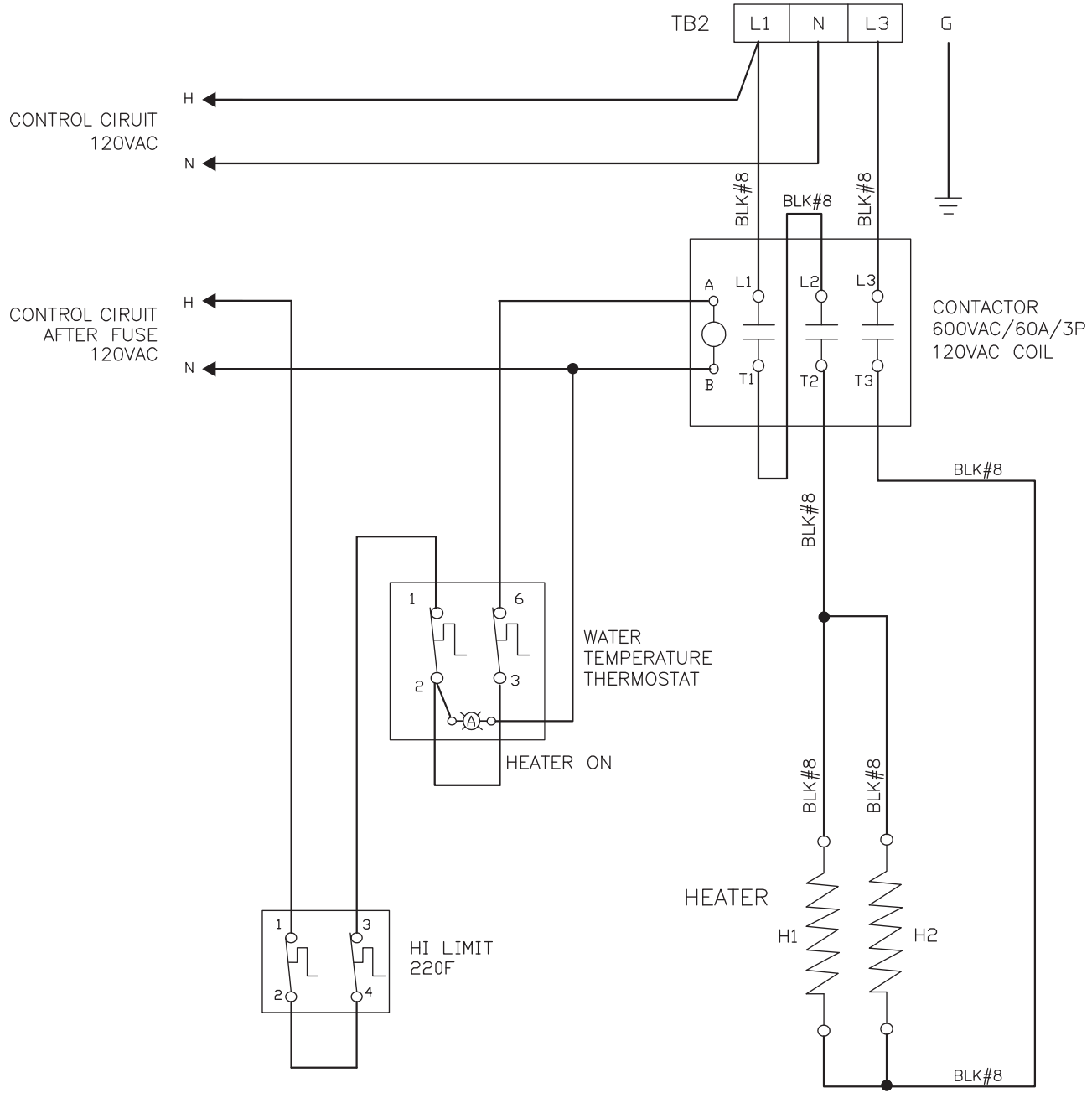
PART NUMBER: LD–RUHTR–112

REVISION: NC

Configuration #3

Heater Circuit

Single Phase 3W+G



NOTE:
1. THIS CONFIGURATION APPLIES TO HEATER CIRCUIT EXCEEDING 40A

VOLTAGE:	SEE BOM
WATTAGE:	SEE BOM
AMPERAGE:	SEE BOM
HERTZ:	50/60
WIRES:	3W + G
PHASE:	1 PH

TITLE: LADDER DIAGRAM HEATER CIRCUIT

PART NUMBER: LD-RUHTR-103

REVISION: NC

TROUBLESHOOTING

To help the service technicians in the field to understand the operation of the RU models, we separate the basic functions of the unit into four different areas:

1. **Heat Supply**
2. **Water Level Control**
3. **Brewing Cycle**
4. **Aeration**

These four functions, even though they utilize the same power supply, work independently from each other.

In the following illustrations, problems are isolated to only that system where a malfunction is located, so in the field or shop, you will know exactly what components are involved.

HEAT SUPPLY OPERATION

For the contact points referenced in this section, see the schematic diagram below.

Components involved:

1. **Power Block**
2. **Thermostat**
3. **Heating Elements**

HEAT SUPPLY

PROBLEM: Water will not heat up or heats up too slowly.

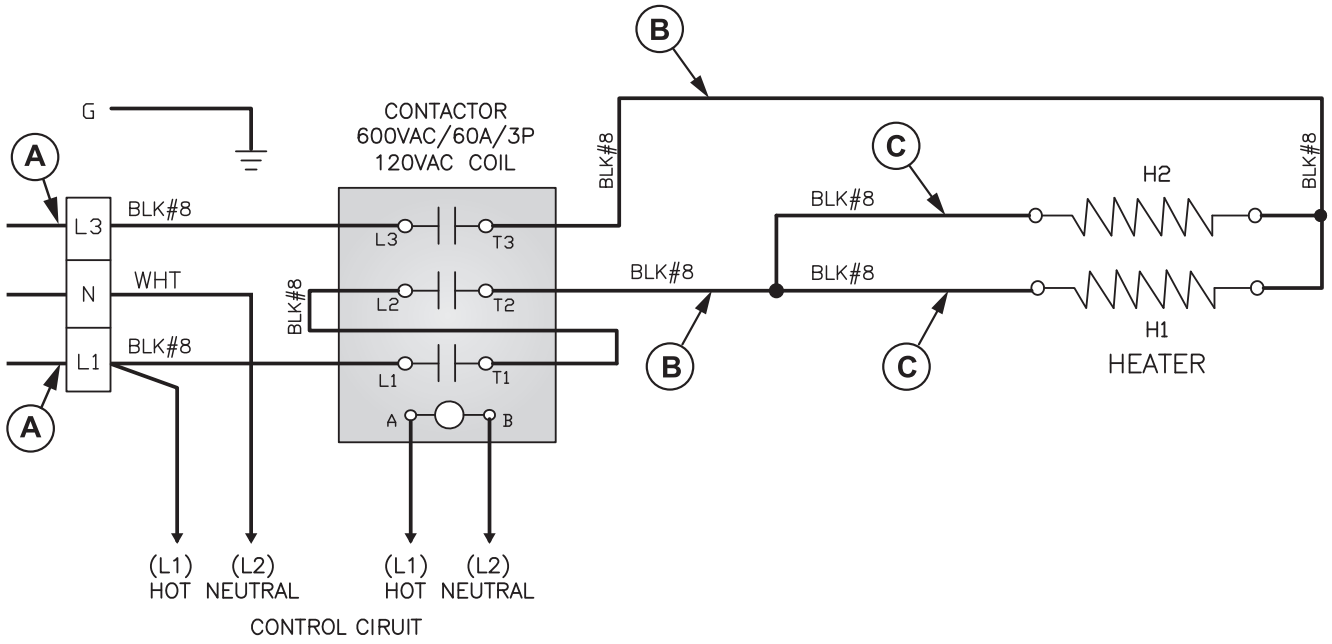
PROCEDURE: Take a voltage reading at terminals L1 and L3 of the power block (marked A & A) and if there is current at the power block.

If there is power, turn the thermostat all the way to boil and clamp your ammeter around heating element wire at point **B** shown in the single phase diagram below. The reading should be approximately the same as indicated in the serial plate of the machine.

If the meter reads only half of the amps that your urn is rated at (check serial plate), one of the heating elements has burnt out. Clamp your ammeter at points **C** to determine which of the heating elements is bad. Replace the heating element.

If the water temperature in the urn is too hot (boiling) or too cold when the pilot light goes out, the thermostat must be calibrated. Reset the thermostat calibration, refer to the steps on page 10.

If the thermostat will not hold a calibration, replace the thermostat.



WATER LEVEL CONTROL OPERATION

For the contact points referenced in this section, see the schematic diagram below.

Components Involved:

1. **Probe Assembly**
2. **Liquid Level Control Board**
3. **Water Inlet Valve Assembly**

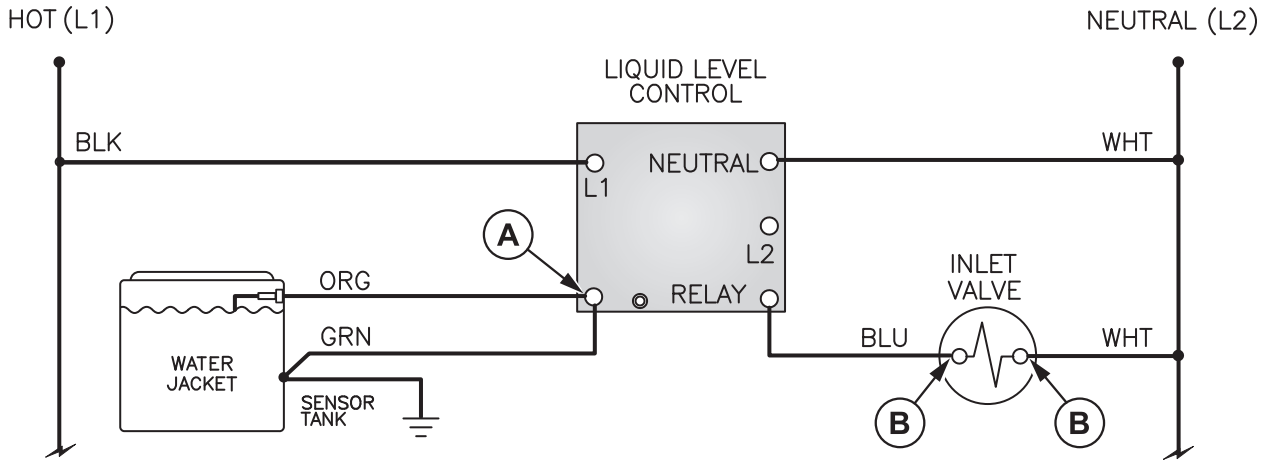
PROBLEM: Water is not flowing into the urn jacket.

PROCEDURE:

Turn off the unit and test the probe assembly and check for grounded wiring. Pull orange wire from the terminal of the liquid level control board at point **A**, with the quick disconnect terminal attached to the orange wire and with the other lead of the meter, touch the metal surface of the urn. Any reading in the meter dial will indicate the presence of a ground in either the terminals, wire, or probe assembly. Find the ground and repair it. If there is no reading at all on your ohmmeter, the probe is okay. Return the orange wire to the terminal 4 of the liquid level control board where it was removed.

Turn the unit on and clamp the leads of your voltmeter at the terminals of the valve coil as shown at **B** of the illustration below. Under normal conditions, the voltmeter should read 110 to 120 volts while the urn is filling up and power to the coil should stop once the water level reaches the probe tip. If the voltmeter does not show voltage, the liquid level control board is not working properly. It is not sending power to the solenoid valve and the valve does not open. Replace the board.

If both the probe and the liquid level control board are functioning normally, check the water inlet valve. Turn on the unit and disconnect the white and the blue wires from the coil on the valve (points **B**). Use a lamp cord with alligator clips; hookup the terminals to the cord. Plug the cord into a 120 volt outlet. The valve should open when plugged in and close when unplugged. Repeat this three or four times. If you don't hear the sound of the solenoid, then the coil is bad. If you hear water flowing through the valve when unplugged, the diaphragm is either torn or needs cleaning. Replace the water inlet valve.



BREWING OPERATION

For the contact points referenced in this section, see the schematic diagram below.

Components Involved:

1. **Fuse**
2. **Brew Switch**
3. **Timer**
4. **Stop Switch**
5. **Water Pump**

PROBLEM: Brew switch light does not turn on when pressed.

Test: Check your power supply and fuse in control box. It may be burned out.

Problem: Brew switch does not stay on, or light stays on only while switch is pressed but turns off when released and water comes out of spray head only while the switch is kept pressed.

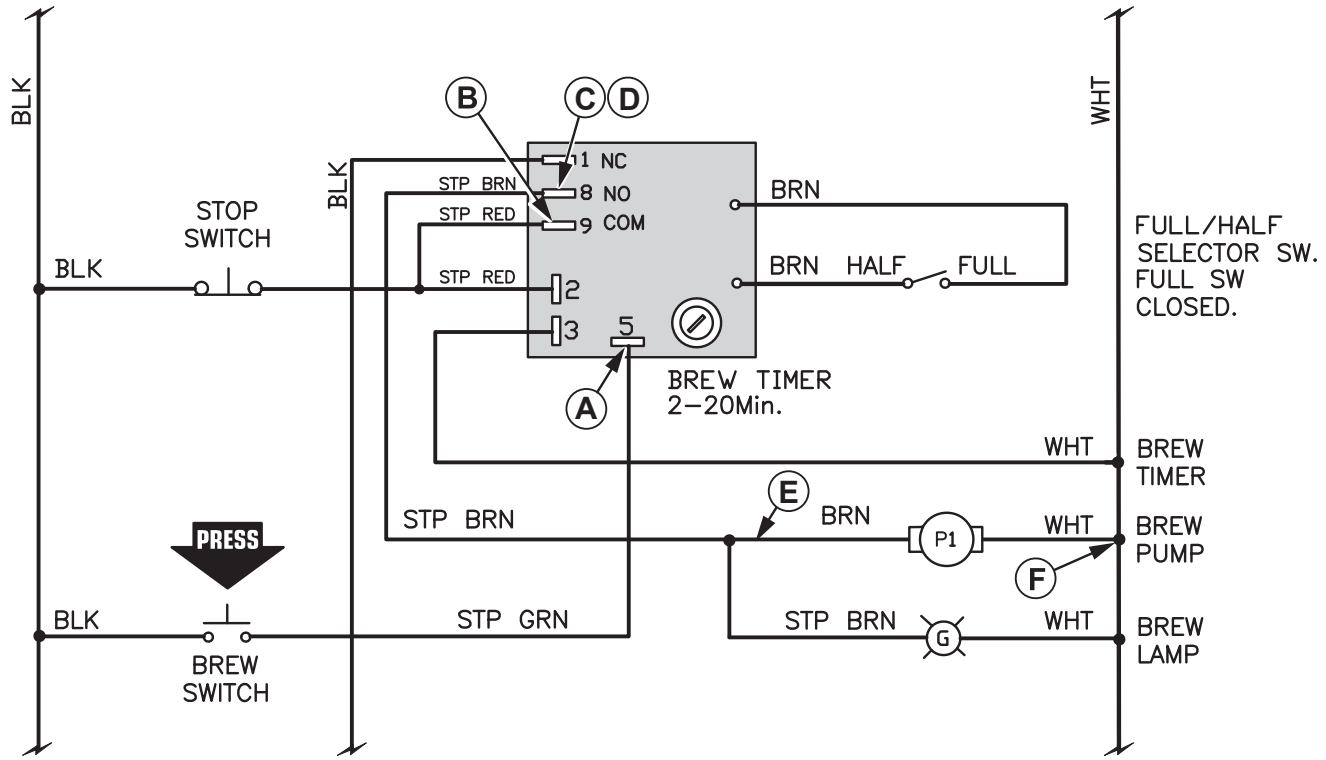
Test Brew Switch: Take a voltage reading at point **A** while the brew switch is pushed in. If you read 110 volts, that means the switch is good.

Test Timer: The timer resets itself to the N. O. position after every brewing cycle but if it fails to stop itself, it will remain closed and cause the problem in question.

To check the timer, **power to the control circuit must be turned off.** Disconnect STP RED (point B) and STP BRN (point C)wires and take a continuity test between the two terminals 8 and 9 on the timer. If there is continuity, the timer is faulty and must be replaced.

Test Water Pump: To test the water pump, press the brew switch and take a voltage reading between points E and F. If there is voltage and the pump does not run, replace the pump.

Test Stop Switch: The last of the components involved in this operation is the stop button. The only function of the switch is to interrupt the current that energizes the timer after the brew switch has been depressed. A voltage reading at N.O. of the timer (point D) will indicate an open or closed condition.



AERATION SYSTEM

For the contact points referenced in this section, see the schematic diagram below.

Components Involved:

1. **Aeration Tubes.**
2. **Air Pump**
3. **Aeration Timer**
4. **Manual Aeration Switch**

AUTOMATIC AERATION

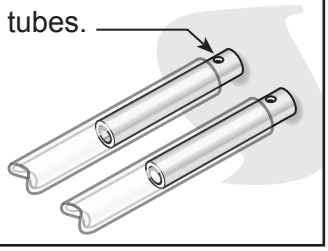
PROBLEM: Only one of the liners is aerated.

TEST: Inside the control box, there are two silicone tubes connecting the aeration pump to the ¼" copper tubes coming from inside the urn. Carefully, pull the silicone tubes from the copper tubes, press the manual aeration button and feel for air flow from the silicone tubes. Replace the pump if air does not blow through the tubes.

Air Pump Tubes.

NOTE: When replacing the silicone tubing on the copper tubes, make sure you do not cover the small holes on the copper tubes.

These are air release holes that pump into the liner so coffee can refill the gauge glass.



PROBLEM: Aeration system fails to operate automatically.

TEST: Determine that the aeration pump is operating by pressing the manual aeration button on the front panel to see that air comes from the tubes.

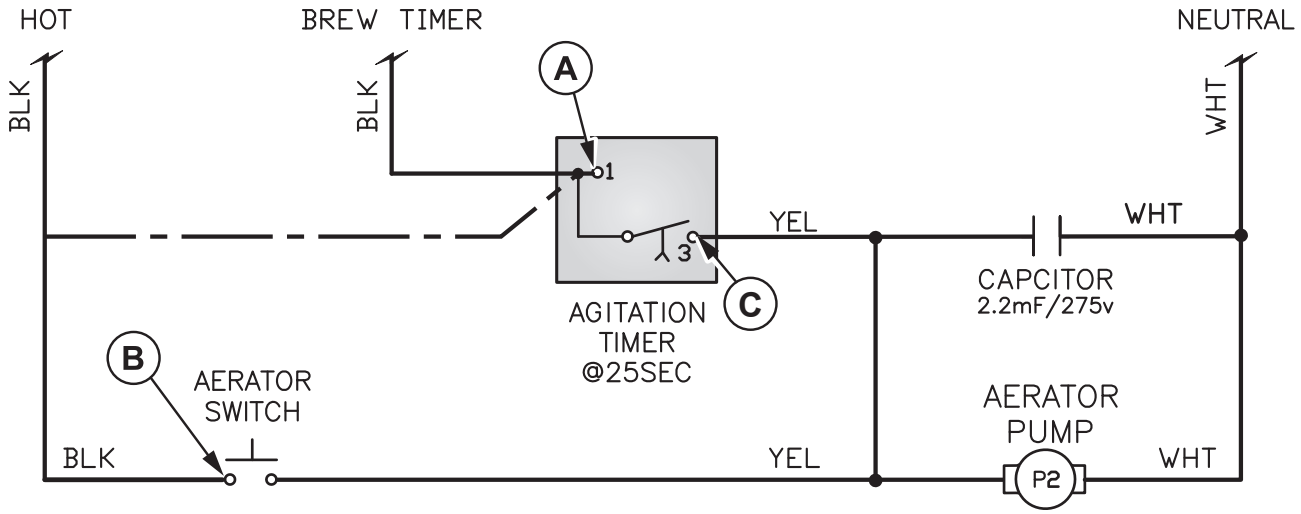
AGITATION TIMER

Check the agitation timer. Remove the Black wire from point A, terminal 1 on the timer. Disconnect the Black wire from the areator switch (point B). Plug this wire into the terminal 1 of the timer (dashed line). The air pump should immediately start pumping air into the liner. If this test fails, replace the agitation timer WC-405R. If the pump runs normally, then replace the wires to their proper connections and proceed to test the aeration switch, below.

MANUAL AERATION

PROBLEM: Manual aeration is not present on either of the liners, yet automatic aeration operates normally.

TEST: Check the continuity of the manual aeration switch. Power to the control circuit must be turned off to check for continuity. Check at the YELLOW wire at point C of the agitation timer and B (BLACK wire) of the manual aeration switch. Press the switch to look for continuity. Check for clean, tight connections at all terminals.



Product Warranty Information

The Wilbur Curtis Company certifies that its products are free from defects in material and workmanship under normal use. The following limited warranties and conditions apply:

3 Years, Parts and Labor, from Original Date of Purchase on digital control boards.

2 Years, Parts, from Original Date of Purchase on all other electrical components, fittings and tubing.

1 Year, Labor, from Original Date of Purchase on all electrical components, fittings and tubing.

Additionally, the Wilbur Curtis Company warrants its Grinding Burrs for Forty (40) months from date of purchase or 40,000 pounds of coffee, whichever comes first. Stainless Steel components are warranted for two (2) years from date of purchase against leaking or pitting and replacement parts are warranted for ninety (90) days from date of purchase or for the remainder of the limited warranty period of the equipment in which the component is installed.
All in-warranty service calls must have prior authorization. For Authorization, call the Technical Support Department at 1-800-995-0417.
Effective date of this policy is April 1, 2003.
Additional conditions may apply. Go to www.wilburcurtis.com to view the full product warranty information.

CONDITIONS & EXCEPTIONS

The warranty covers original equipment at time of purchase only. The Wilbur Curtis Company, Inc., assumes no responsibility for substitute replacement parts installed on Curtis equipment that have not been purchased from the

Wilbur Curtis Company, Inc. The Wilbur Curtis Company will not accept any responsibility if the following conditions are not met. The warranty does not cover and is void under the following circumstances:

1) Improper operation of equipment: The equipment must be used for its designed and intended purpose and function.
2) Improper installation of equipment: This equipment must be installed by a professional technician and must comply with all local electrical, mechanical and plumbing codes.
3) Improper voltage: Equipment must be installed at the voltage stated on the serial plate supplied with this equipment.
4) Improper water supply: This includes, but is not limited to, excessive or low water pressure, and inadequate or fluctuating water flow rate.
5) Adjustments and cleaning: The resetting of safety thermostats and circuit breakers, programming and temperature adjustments are the responsibility of the equipment owner. The owner is responsible for proper cleaning and regular maintenance of this equipment.
6) Damaged in transit: Equipment damaged in transit is the responsibility of the freight company and a claim should be made with the carrier.
7) Abuse or neglect (including failure to periodically clean or remove lime accumulations): Manufacturer is not responsible for variation in equipment operation due to excessive lime or local water conditions. The equipment must be maintained according to the manufacturer's recommendations.
8) Replacement of items subject to normal use and wear: This shall include, but is not limited to, light bulbs, shear disks, "0" rings, gaskets, silicone tube, canister assemblies, whipper chambers and plates, mixing bowls, agitation assemblies and whipper propellers.
9) Repairs and/or Replacements are subject to our decision that the workmanship or parts were faulty and the defects showed up under normal use. All labor shall be performed during regular working hours. Overtime charges are the responsibility of the owner. Charges incurred by delays, waiting time, or operating restrictions that hinder the service technician's ability to perform service is the responsibility of the owner of the equipment. This includes institutional and correctional facilities.

The Wilbur Curtis Company will allow up to 100 miles, round trip, per in-warranty service call.
RETURN MERCHANDISE AUTHORIZATION: All claims under this warranty must be submitted to the Wilbur Curtis Company Technical Support Department prior to performing any repair work or return of this equipment to the factory. All returned equipment must be repackaged properly in the original carton. No units will be accepted if they are damaged in transit due to improper packaging. NO UNITS OR PARTS WILL BE ACCEPTED WITHOUT A RETURN MERCHANDISE AUTHORIZATION (RMA). RMA NUMBER MUST BE MARKED ON THE CARTON OR SHIPPING LABEL. All in-warranty service calls must be performed by an authorized service agent. Call the Wilbur Curtis Technical Support Department to find an agent near you.

ECN 16033 . 7/24/14 @ 13.0 . rev D . V6

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